Amendment dated June 26, 2007

Reply to Office Action of January 26, 2007

## AMENDMENTS TO THE CLAIMS

## **Listing of Claims:**

1. (Currently amended) A process for preparing an enzyme-containing granulate suitable for use in animal feed, the process comprising:

- (1) mixing together at least one enzyme, a solid support suitable for feedstuffs, and water, and at least one additive in an effective amount to form a mixture;
- (2) mechanically processing the mixture obtained in (1), simultaneously with or subsequently to the mixing, to obtain enzyme-containing granules;
- (3) drying the granules; and
- (4) coating the granules obtained in (3) with an organic polymer which is suitable for feedstuffs to obtain enzyme-containing granulates, wherein the enzyme-containing granulate has a pelleting stability greater than uncoated granules and wherein the organic polymer is selected from the group consisting of
  - (a) polyalkylene glycols having a number average molecular weight of from 400 to 15,000;
  - (b) polyalkylene oxide polymers or copolymers having a number average molecular weight of from 400 to 20,000;
  - (c) polyvinylpyrrolidone having a number average molecular weight from 7000 to 1,000,000;
  - (d) vinylpyrrolidone having a number average molecular weight of from 30,000 to 100,000;
  - (e) polyvinyl alcohol having a number average molecular weight of 20,000 to 100,000; and
  - (f) hydroxypropyl methyl cellulose having a number average molecular weight from 6000 to 80,000.

Amendment dated June 26, 2007

Reply to Office Action of January 26, 2007

2. (Previously presented) The process of claim 1 wherein the mixture is processed to form the enzyme-containing granule by extrusion, mixer-granulation, fluidized-bed granulation, disk agglomeration or compacting.

- 3. (Previously presented) The process of claim 1 wherein the enzyme-containing granule obtained is spheronized prior to drying.
- 4. (Previously presented) The process of claim 1 wherein the granulation and/or polymer coating is carried out continuously or batchwise.
- 5. (Cancelled)
- 6. (Previously presented) The process of claim 1 wherein the enzyme-containing granule is coated with an aqueous or nonaqueous solution or dispersion of the organic polymer.
- 7. (Currently amended) The process of claim 6, wherein a from 10 to 50% strength by weight aqueous or nonaqueous solution of at least one polymer is used for the coating, which polymer is selected from the group consisting of
  - (a) polyalkylene glycols having a number average molecular weight of from 400 to 15,000;
  - (b) polyalkylene oxide polymers or copolymers having a number average molecular weight of from 400 to 20,000;
  - (c) polyvinylpyrrolidone having a number average molecular weight from 7000 to 1,000,000;
  - (d) vinylpyrrolidone having a number average molecular weight of from 30,000 to 100,000;
  - (e) polyvinyl alcohol having a number average molecular weight of 20,000 to 100,000; and

Docket No.: 13111-00039-US Application No.: 10/018,339

Amendment dated June 26, 2007

Reply to Office Action of January 26, 2007

hydroxypropyl methyl cellulose having a number average molecular weight from 6000 to 80,000.

- 8. (Cancelled).
- (Previously presented) The process of claim 1 wherein a powder coating is carried out 9. with a powder of a solid polymer which is selected from the group consisting of hydroxypropyl methyl celluloses having a number average molecular weight from 6000 to 80,000 mixed with a plasticizer.
- (Previously presented) The process of claim 1, wherein a melt of at least one polymer is 10. used for the coating, which polymer is selected from the group consisting of:
  - a) polyalkylene glycols, having a number average molecular weight from 1000 to 15,000; and
  - polyalkylene oxide polymers or copolymers having a number average molecular b) weight from 4000, to 20,000.
- (Currently amended) A method for preparing a pelletized feedstuff composition, which 11. comprises pelletizing a mixture of animal feed constituents and an enzyme-containing granulate suitable for use in animal feed, the enzyme-containing granulate comprising a mixture of at least one enzyme, a solid support suitable for feedstuffs, and water, and at least one additive in an effective amount, wherein the granulate is coated with an organic polymer which is suitable for feedstuffs selected from the group consisting of:
  - polyalkylene glycols having a number average molecular weight of from 400 to a) 15,000;
  - polyalkylene oxide polymers or copolymers having a number average molecular b) weight of from 4000, to 20,000;
  - polyvinylpyrrolidone having a number average molecular weight from 7000 to c)

Amendment dated June 26, 2007

Reply to Office Action of January 26, 2007

1,000,000;

d) vinylpyrrolidone/vinylacetate copolymers having a number average molecular weight from 30,000 to 100,000;

- e) polyvinyl alcohol having a number average molecular weight from 20,000 to 100,000;
- f) hydroxypropyl methyl cellulose having a number average molecular weight from 6,000 to 80,000;
- g) alkyl (meth)acrylate polymers and copolymers having a number average of molecular weight from 100,000 to 1,000,000; and
- h) polyvinyl acetate having a number average molecular weight from 250,000 to 700,000

and wherein the granulate has a pelleting stability greater than an uncoated granulate.

- 12. (Previously presented) The method of claim 11 wherein the granulate has a mean particle size from 0.4 to 2 mm.
- 13. (Previously presented) The method of claim 11 wherein the granulate comprises at least one enzyme selected from the group consisting of oxidoreductases, transferases, lyases, isomerases, ligases, phosphatases and hydrolases.
- 14. (Previously presented) The method of claim 13 wherein the hydrolase is a non-starch-polysaccharide-cleaving enzyme.
- 15. (Previously presented) The method of claim 13 wherein the phosphatase is phytase.
- 16. (Previously presented) The method of claim 15 wherein the granulate comprises from  $1 \times 10^3$  to  $1 \times 10^5$  U of phytase per gram of total weight.

Amendment dated June 26, 2007

Reply to Office Action of January 26, 2007

17. (Currently amended) A pelleted feedstuff composition which, comprises at least one enzyme-containing granulate suitable for use in animal feed, wherein said granulate comprises a mixture of at least one enzyme, a solid support suitable for feedstuffs, and water, and at least one additive in an effective amount, the enzyme-containing granulate coated with an organic polymer which is suitable for feedstuffs and selected from the group consisting of:

- a) polyalkylene glycols having a number average molecular weight from 400 to 15,000;
- b) polyalkylene oxide polymers or copolymers having a number average molecular weight from 4000 to 20,000;
- c) polyvinylpyrrolidone having a number average molecular weight from 7000 to 1,000,000;
- d) vinylpyrrolidone/vinylacetate copolymers having a number average molecular weight from 30,000 to 100,000;
- e) polyvinyl alcohol having a number average molecular weight from 20,000 to 100,000;
- f) hydroxypropyl methyl cellulose having a number average molecular weight from 6000 to 80,000;
- g) alkyl (meth)acrylate polymers and copolymers having a number average molecular weight from 100,000 to 1,000,000; and
- h) polyvinyl acetate having a number average molecular weight from 250,000 to 700,000,

and wherein the granulate has a pelleting stability greater than an uncoated granulate.

- 18. (Cancelled).
- 19. (Previously presented) The process of claim 11, wherein the organic polymer coating does not melt during pelletizing.

Amendment dated June 26, 2007
Reply to Office Action of January 26, 2007

20. (Previously presented) The process of claim 1, wherein the organic polymer is filler-free.

- 21. (Previously presented) The process of claim 1, wherein the coating takes place at from about 35 to 50°C.
- 22. (Previously presented) A method for improving pelleting stability of an enzyme-containing granulate suitable for use in animal feed comprising applying an organic polymer coating acceptable as feedstuff onto said granulate in an amount sufficient to improve pelleting stability of said granulate when compared with an uncoated granulate, wherein the organic polymer is selected from the group consisting of
  - (a) polyalkylene glycols having a number average molecular weight of from 400 to 15,000;
  - (b) polyalkylene oxide polymers or copolymers having a number average molecular weight of from 400 to 20,000;
  - (c) polyvinylpyrrolidone having a number average molecular weight from 7000 to 1,000,000;
  - (d) vinylpyrrolidone having a number average molecular weight of from 30,000 to 100,000;
  - (e) polyvinyl alcohol having a number average molecular weight of 20,000 to 100,000;
  - (f) hydroxypropyl methyl cellulose having a number average molecular weight from 6000 to 80,000;
  - g) alkyl (meth)acrylate polymers and copolymers having a number average molecular weight from 100,000 to 1,000,000; and
  - h) polyvinyl acetate having a number average molecular weight from 250,000 to 700,000.

Amendment dated June 26, 2007

Reply to Office Action of January 26, 2007

23. (Previously presented) The method of claim 22, wherein the coating is applied in a proportion of about 3 to 25% by weight of the total weight of the granulate.

- 24. (Previously presented) An enzyme-containing granulate coated with an organic polymer obtained by the process of claim 1.
- 25. (Previously presented) A pelletized feedstuff composition obtained by the process of claim 11.
- 26. (New) The process of claim 1, wherein the mixture of step (1) further comprises at least one additive.
- 27. (New) The method of claim 11, wherein the mixture further comprises at least one additive.
- 28. (New) The composition of claim 17, wherein the mixture further comprises at least one additive.